island health

DRINKING WATER SYSTEM ANNUAL REPORT

Reporting Period: January 1st to December 31st, 2024 (year)

Water System Dogwood Ridge Water System

Water System Owner Cowichan Valley Regional District

Primary Contact Name (Operator or Manager) Vanessa Thomson

Phone Number (Operator or Manager) 250-746-2535

E-mail (Operator or Manager) Vanessa.Thomson@cvrd.bc.ca

DESCRIBE YOUR WATER SUPPLY SYSTEM

What is the Source(s) of Raw Water?

☒ Deep Well ☐ Shallow Well ☐ Surface Water ☐ Other

If other, specify details:

Does the Drinking Water System have Primary Disinfection? ☒ Yes ☐ No

☒ Chlorination ☐ Ultraviolet Light ☐ Ozone ☐ Other

If other, specify details:

Does the Drinking Water System have Secondary Disinfection? ☒ Yes ☐ No

☒ Chlorination ☐ Other

If other, specify details:

Does the Drinking Water System have Filtration? ☐ Yes ☒ No

Check all boxes that apply

☐ Cartridge Filter(s) ☐ Carbon Filter ☐ Sand Filtration ☐ Reverse Osmosis ☐ Other

If other, specify details:

PUBLIC REPORTING

Emergency Response & Contingency Plan (ERCP)

Is your ERCP up to Date? ☒ Yes ☐ No

How do you Inform the System Users of the ERCP?

☒ Hand Delivered ☒ Bulletin Board ☒ Newspaper ☐ Utility Bill Insert ☒ Website

☒ Other (specify details) Radio, Social Media

Drinking Water System Annual Report

How do you Inform the System Users of the Annual Report?

☐ Hand Delivered ☐ Bulletin Board ☐ Newspaper ☐ Utility Bill Insert ☒ Website

☐ Other (specify details)

COMPLIANCE WITH OPERATING PERMIT

List the conditions of your Operating Permit (Contact the DWO for a copy if needed):

Are you in compliance with your Operating Permit? ■ Yes ☐ No

BACTERIOLOGICAL TESTING AND DRINKING WATER PROTECTION REGULATION WATER QUALITY STANDARDS

How many bacteriological samples were collected during this reporting period? 50

What is the minimum required sampling frequency for this system? (#samples/month) 4 samples/month

Additional sampling details:

Was the minimum required sampling frequency achieved? ■ Yes ☐ No

Comments:

Bacteriological summary attached to this report? ■ Yes ☐ No

If no, how do the users of the system view the results?

WATER QUALITY STANDARDS FOR POTABLE WATER

Parameter:	***Standard:***	**Did this system meet standard?**	
Escherichia coli (for all samples)	No detectable *Escherichia coli* per 100ml	■ Yes	☐ No
Total Coliform Bacteria *(if only 1 sample collected in a 30 day period)*	No detectable total coliform bacteria per 100ml	■ Yes	☐ No
Total Coliform Bacteria *(if more than 1 sample collected in a 30 day period)*	No more than 10% of samples contain total coliform bacteria, **and** No sample has more than 10 total coliform bacteria per 100ml	■ Yes	☐ No

If the system did not meet any of above Drinking Water Protection Regulation standards, record the results in the table below; attach additional sheets if necessary.

Date	TC/100ml	E.coli/100ml	Reason	Corrective Action

CHEMICAL SAMPLING COMPLETED DURING THIS REPORTING PERIOD

Was any chemical sampling conducted during reporting period? ■ Yes ☐ No

If no, when were the last chemical samples conducted for this system? (date) ☐ Don't know

If yes, attach a list of the chemical results Full Spectrum Report for Source - February 2024

If any water samples did not meet the Guidelines for Canadian Drinking Water Quality, record the results in the table below; attach additional sheets if necessary.

Next scheduled full chemical test *(*date) Distribution - April 2025

Parameter	Result	Corrective Action / Treatment / Comments

ADDITIONAL TESTING

Does the system have analyzers for continuous monitoring? ■ Yes ☐ No

If yes, check all boxes that apply:

■ Chlorine ☐ Turbidity ☐ Other (details)

Are the results available on request?

If any additional testing or sampling was conducted, record results in the table below; attach additional sheets if necessary.

Additional Testing & Reason for Sampling	Corrective Action Taken
Total Manganese	All sampling results above AO, but below MAC

WATER QUALITY COMPLAINTS

Were there any water quality complaints in this reporting period? (e.g. taste, odour, colour etc.) ☐ Yes ■ No

If yes, complete the table below; attach additional sheets if necessary.

Date	Water Quality Complaint	Corrective Action / Treatment

OPERATIONAL PROBLEMS

Were there any operational problems during this reporting period? (e.g. insufficient water supply, malfunction of disinfection equipment, line breaks, elevated turbidity etc.). ☐ Yes ■ No

If yes, complete the table below; attach additional sheets if necessary.

Incident Date	Type of Operational Problem	Corrective Action Taken
June 2024	Minimum Water Hauling	

MAJOR UPGRADES/REPAIRS & EXPENSES

Were there any major upgrades/repairs or any major costs incurred during this reporting period? ■ Yes ☐ No

If yes, complete the table below; attach additional sheets if necessary.

Major Upgrades/Expenses	Details
Improvements required by DWO	
Additions/changes to system	
Purchase or install new equipment	
Equipment repair or replacement	
Annual maintenance of system	System flushing, hydrant/genset/chlorine equipment maintenance
Specialist report	
Other	Well rehabilitation completed

FUTURE IMPROVEMENTS

Are there any plans for future improvements? ■ Yes ☐ No

If yes, complete the table below; attach additional sheets if necessary.

Future Upgrades or Improvements	Estimated Date of Completion

Click here to enter a date. February 19, 2025 **DATE COMPLETED:**	Tyler Sousa **COMPLETED BY:**

DOGWOOD RIDGE WATER SYSTEM

Facility Information

Location 175 Ingram Street Duncan

Type 15 - 300 Connections

Facility Sampling History

Location	Date	Total Coliform	E. Coli
S1 2628 Bruce Road	11-Dec-2024	LT1	LT1
S2 Water treatment building	03-Dec-2024	LT1	LT1
S1 2628 Bruce Road	27-Nov-2024	LT1	LT1
S2 Water treatment building	19-Nov-2024	LT1	LT1
S1 2628 Bruce Road	12-Nov-2024	QRWRT	QRWRT
S2 Water treatment building	06-Nov-2024	LT1	LT1
S1 2628 Bruce Road	28-Oct-2024	LT1	LT1
S2 Water treatment building	22-Oct-2024	LT1	LT1
S1 2628 Bruce Road	15-Oct-2024	LT1	LT1
S2 Water treatment building	07-Oct-2024	LT1	LT1
S1 2628 Bruce Road	02-Oct-2024	LT1	LT1
S2 Water treatment building	23-Sep-2024	LT1	LT1
S1 2628 Bruce Road	18-Sep-2024	LT1	LT1
S2 Water treatment building	09-Sep-2024	LT1	LT1
S1 2628 Bruce Road	03-Sep-2024	LT1	LT1
S2 Water treatment building	26-Aug-2024	LT1	LT1
S1 2628 Bruce Road	20-Aug-2024	LT1	LT1
S2 Water treatment building	13-Aug-2024	LT1	LT1
S1 2628 Bruce Road	07-Aug-2024	LT1	LT1
S2 Water treatment building	30-Jul-2024	LT1	LT1
S1 2628 Bruce Road	24-Jul-2024	LT1	LT1
S2 Water treatment building	15-Jul-2024	LT1	LT1
S1 2628 Bruce Road	08-Jul-2024	LT1	LT1
S2 Water treatment building	03-Jul-2024	LT1	LT1
S1 2628 Bruce Road	24-Jun-2024	LT1	LT1
S2 Water treatment building	17-Jun-2024	QRWRT	QRWRT
S1 2628 Bruce Road	11-Jun-2024	LT1	LT1
S2 Water treatment building	03-Jun-2024	LT1	LT1
S1 2628 Bruce Road	28-May-2024	LT1	LT1
S2 Water treatment building	21-May-2024	LT1	LT1
S1 2628 Bruce Road	13-May-2024	LT1	LT1
S2 Water treatment building	06-May-2024	LT1	LT1
S1 2628 Bruce Road	29-Apr-2024	LT1	LT1
S2 Water treatment building	22-Apr-2024	LT1	LT1
S1 2628 Bruce Road	15-Apr-2024	LT1	LT1
S2 Water treatment building	08-Apr-2024	LT1	LT1
S1 2628 Bruce Road	02-Apr-2024	LT1	LT1
S2 Water treatment building	25-Mar-2024	LT1	LT1
S1 2628 Bruce Road	18-Mar-2024	LT1	LT1
S2 Water treatment building	13-Mar-2024	LT1	LT1
S1 2628 Bruce Road	05-Mar-2024	LT1	LT1
S2 Water treatment building	26-Feb-2024	LT1	LT1

DOGWOOD RIDGE WATER SYSTEM

Facility Information

Location 175 Ingram Street Duncan

Type 15 - 300 Connections

Facility Sampling History

Location	Date	Total Coliform	E. Coli
S1 2628 Bruce Road	20-Feb-2024	LT1	LT1
S2 Water treatment building	13-Feb-2024	LT1	LT1
S1 2628 Bruce Road	05-Feb-2024	LT1	LT1
S2 Water treatment building	30-Jan-2024	LT1	LT1
S1 2628 Bruce Road	23-Jan-2024	LT1	LT1
S2 Water treatment building	15-Jan-2024	LT1	LT1
S1 2628 Bruce Road	08-Jan-2024	OGO OGC	OGO OGC
S2 Water treatment building	02-Jan-2024	LT1	LT1

DOGWOOD RIDGE WATER SYSTEM

SOURCE - Well 1 & Well 2

			Sample ID	Well 2 (WTX 27ACE)	WELL 1 (WTX 27ACD)
			Sampling Date	02/08/24	11/27/24
			Sampling Time	9:30 AM	12:10 PM
Parameter Name	***MAC***	***AO***	***Units***	***Result***	***Result2***
Nitrite (N)	1		mg/L	<0.0050	<0.0050
Nitrate (N)	10		mg/L	<0.020	<0.020
Conductivity			uS/cm	360	280
pH			pH	8.21	7.73
Total Dissolved Solids		500	mg/L	190	160
Alkalinity (PP as CaCO3)			mg/L	<1.0	<1.0
Alkalinity (Total as CaCO3)			mg/L	140	130
Bicarbonate (HCO3)			mg/L	180	160
Carbonate (CO3)			mg/L	<1.0	<1.0
Hydroxide (OH)			mg/L	<1.0	<1.0
Chloride (Cl)		250	mg/L	28	4.6
Sulphate (SO4)		500	mg/L	<1.0	<1.0
True Colour		15	Col. Unit	5	6.1
Nitrate plus Nitrite (N)			mg/L	<0.020	<0.020
Langelier Index (@ 20C)			N/A	0.222	-0.167
Langelier Index (@ 4C)			N/A	-0.027	-0.417
Saturation pH (@ 20C)			N/A	7.99	7.9
Saturation pH (@ 4C)			N/A	8.24	8.15
Dissolved Fluoride (F)	1.5		mg/L	0.1	0.15
Tannins and Lignins			mg/L	<0.2	0.3
Turbidity	see remark	see remark	NTU	0.17	4.7
Total Hardness (CaCO3)			mg/L	72.4	110
Total Aluminum (Al)	2900		ug/L	<3.0	<3.0
Total Antimony (Sb)	6		ug/L	<0.50	<0.50
Total Arsenic (As)	10		ug/L	2.11	3.45
Total Barium (Ba)	2000		ug/L	58.1	17.3
Total Beryllium (Be)			ug/L	<0.10	<0.10
Total Bismuth (Bi)			ug/L	<1.0	<1.0
Total Boron (B)	5000		ug/L	65	<50
Total Cadmium (Cd)	7		ug/L	<0.010	<0.010
Total Chromium (Cr)	50		ug/L	<1.0	<1.0
Total Cobalt (Co)			ug/L	<0.20	<0.20
Total Copper (Cu)	2000	1000	ug/L	0.45	0.38
Total Iron (Fe)		300	ug/L	116	**1420**
Total Lead (Pb)	5		ug/L	<0.20	<0.20
Total Manganese (Mn)	120	20	ug/L	**89.8**	**149**
Total Molybdenum (Mo)			ug/L	<1.0	<1.0
Total Nickel (Ni)			ug/L	<1.0	<1.0
Total Selenium (Se)	50		ug/L	<0.10	<0.10
Total Silicon (Si)			ug/L	9370	13200
Total Silver (Ag)			ug/L	<0.020	<0.020
Total Strontium (Sr)	7000		ug/L	403	107
Total Thallium (Tl)			ug/L	<0.010	<0.010
Total Tin (Sn)			ug/L	<5.0	<5.0

DOGWOOD RIDGE WATER SYSTEM

SOURCE - Well 1 & Well 2

			Sample ID	Well 2 (WTX 27ACE)	WELL 1 (WTX 27ACD)
			Sampling Date	02/08/24	11/27/24
			Sampling Time	9:30 AM	12:10 PM
Parameter Name	***MAC***	***AO***	***Units***	***Result***	***Result2***
Total Titanium (Ti)			ug/L	<5.0	<5.0
Total Uranium (U)	20		ug/L	<0.10	<0.10
Total Vanadium (V)			ug/L	<5.0	<5.0
Total Zinc (Zn)		5000	ug/L	<5.0	<5.0
Total Zirconium (Zr)			ug/L	<0.10	<0.10
Total Calcium (Ca)			mg/L	17.6	22.2
Total Magnesium (Mg)			mg/L	6.92	13.2
Total Potassium (K)			mg/L	0.724	1.3
Total Sodium (Na)		200	mg/L	47.8	14.2
Total Sulphur (S)			mg/L	<3.0	<3.0
Total Mercury (Hg)	1		ug/L	0.0173	<0.0019
Total Total Kjeldahl Nitrogen (Calc)			mg/L	0.5	1.1
Total Organic Carbon (C)			mg/L	0.68	1.3
Total Nitrogen (N)			mg/L	0.504	1.12
Total Ammonia (N)			mg/L	0.41	1
Sulphide (as H2S)		0.05	mg/L	<0.0020	<0.0020
Total Sulphide		0.05	mg/L	<0.0018	0.0018
Total Coliforms	0		CFU/100mL	0	0
E. coli	0		CFU/100mL	0	0
Heterotrophic Plate Count			CFU/mL	17	4
Fecal Coliforms			CFU/100mL	<1	<1
Non-Coliform (Background)			CFU/100mL	8	96
Iron Bacteria			CFU/mL	<25	<25
Sulphate reducing bacteria			CFU/mL	<75	<75

DOGWOOD RIDGE WATER SYSTEM

Iron & Manganese

			Sample ID	S1-2628 Bruce Rd (WTX 27B40)	S2 tap on distribution inside TB (WTX 27B41)	S2 TAP ON DISTRIBUTION INSIDE TB (WTX 27B41)	S1-2628 BRUCE RD (WTX 27B40)
			Sampling Date	01/16/24	01/16/24	04/18/24	04/18/24
			Sampling Time	2:55 PM	3:05 PM	11:20 AM	11:32 AM
Parameter Name	***MAC***	***AO***	***Units***	***Result***	***Result2***	***Result3***	***Result4***
Total Iron (Fe)		300	ug/L	223			
Total Manganese (Mn)	120	20	ug/L	**71.3**	**76.5**	**79.9**	**40.7**

			Sample ID	S1-2628 BRUCE RD (WTX 27B40)	S2 TAP ON DISTRIBUTION INSIDE TB (WTX 27B41)	S2 TAP ON DISTRIBUTION INSIDE TB (WTX 27B41)	S1-2628 BRUCE RD (WTX 27B40)
			Sampling Date	07/11/24	07/11/24	11/27/24	11/27/24
			Sampling Time	9:20 AM	9:30 AM	11:55 AM	12:05 PM
Parameter Name	***MAC***	***AO***	***Units***	***Result5***	***Result6***	***Result7***	***Result8***
Total Iron (Fe)		300	ug/L				
Total Manganese (Mn)	120	20	ug/L	**67.8**	**45.8**	**50.4**	**57.2**